3.0 CHEMICAL TAPE MONITORING

Sulfuric acid monitoring was conducted using a Honeywell (Zellweger) MDA Single Point Monitor (SPM) equipped with a chemically treated paper tape specific for mineral acids and an LED optical sensor that monitors color development. Quantitation is based on the degree of color change. The manufacturer has determined its Lower Detection Limit (LDL) for sulfuric acid to be 26 parts per billion (ppb).

Measurements from the ADS Monitoring Site were continuously data logged and downloaded weekly for data analysis using a Logic Beach Data Logger. Data were collected every two minutes, from August 2 to August 23, 2006 for a total of 8,100 data points. Of these values, all but one were below the LDL of 26 ppb (see Figure 3). Although the SPM data showed a low or negative response to mineral acids, TPB staff experienced irritating effects such as burning of skin, eyes and nose from the area surrounding the SPM and at other times observed a cloudy haze. ADS systems were installed shortly thereafter. Use of the ADS is generally a more accurate and sensitive method for sampling of acidic gases and aerosols in ambient air.

Figure 3. Mineral Acids measured as sulfuric acid at ADS Monitoring Site August 3-August 23, 2006.